UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/702,291	10/30/2000	Krishna Kanth	9791730-0014	1426

23446	7590	03/30/2004

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EXAMINER
HAN, CLEMENCE S

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _30 October 2000_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-20_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-20_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claim 1–20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Courts et al. (US Patent 6,076,108) in view of Bayeh et al. (US Patent 6,098,093)

and further in view of Fukumoto et al. (US Patent 5,155,678).

In regarding to claim 1 and 11, Courts teaches a method for providing

transparent backup service from a primary node to a backup node for applications

having objects running on the primary node, the method comprising: defining a

state for each application, the state having state parameters (Column 9 Line 63–

Column 10 Line 18), and whereby the state can change with each user interaction

with the application (Column 7 Line 59–Column 8 Line 8); determining pooling

arrangements for storing the states associated with each application in a session

object associated with a particular session (Column 10 Line 10 – 18); periodically

replicating the session object over to the backup node (Column 7 Line 59–Column

8 Line 8). Courts, however, does not teach serializing the pooled states in the

session object, with canonical representations for the various state parameters

when available, and raw state parameter data being used otherwise. Bayeh teaches

serializing the pooled states in the session object (Column 12 Line 31–34), with

canonical representations (Column 3 Line 8–19) for the various state parameters

when available, and raw state parameter data being used otherwise. It would have

been obvious to one skilled in the art to modify Courts to serialize and use

canonical representation as taught by Bayeh in order to communicate more

efficiently. Even though Courts teaches the fault tolerance against the server

failure (Column 5 Line 15–23), Courts in view of Bayeh does not teach explicitly

that upon fail-over the backup node can be instructed to parse through the

serialized data and reconstruct the application objects according to the given state

at fail-over, thereby providing a transparent backup for running the application.

Fukumoto teaches that upon fail-over the backup node can be instructed to parse

through the serialized data and reconstruct the application objects according to the

given state at fail-over, thereby providing a transparent backup for running the

application (Column 3 Line 42–47). It would have been obvious to one skilled in

the art to modify Courts in view of Bayeh to reconstruct the application objects

according to the given state at fail-over as taught by Fukumoto in order to maintain

integrity of transactions (Column 1 Line 55–66).

In regarding to claim 2 and 12, Bayeh teaches the applications comprised of steps including composite steps, simple steps, interactive steps, and application steps (Column 1 Line 29 – Column 2 Line 59).

In regarding to claim 3 and 13, Bayeh teaches the pooling arrangement includes a global pool (Column 12 Line 29–58) having at least a composite step pool, a simple step pool, an interactive step pool, and an application step pool (Column 1 Line 29 – Column 2 Line 59).

In regarding to claim 4 and 14, Bayeh teaches the canonical representations include logical references to an object identifier (Column 3 Line 8–19) in a database associated with the nodes.

In regarding to claim 5 and 15, Fukumoto teaches the pooling arrangement includes hash lookup tables (Figure 11) for efficiently storing and retrieving the pooled state information.

In regarding to claim 6 and 16, Courts teaches the step of periodically replicating the session object occurs for each new user interaction with the nodes (Column 7 Line 59 – Column 8 Line 8).

In regarding to claim 7 and 17, Courts teaches user interaction occurs via a browser sending requests and receiving responses (Column 9 Line 21–25), and

each browser session corresponds with a different session object (Column 7 Line

31–37).

In regarding to claim 8 and 18, Bayeh teaches a web server device is

associated with a plurality of nodes, and user requests are directed through the web

server to the appropriate node (Figure 3).

In regarding to claim 9 and 19, Fukumoto teaches the step of periodically

replicating the session object includes sending the session object from the primary

node to the backup node over the associated network configuration (Figure 2).

In regarding to claim 10 and 20, Courts teaches the step of periodically

replicating the session object includes storing the session object on a shared

storage medium for access by both the primary node and the backup node (Figure

3A).

Conclusion

3.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. The following patents are cited to further show the state of

the art with respect to the fault tolerance in general.

U.S. Patent 5,027,269 to Grant et al.

U.S. Patent 5,581,753 to Terry et al.

U.S. Patent 5,652,908 to Douglas et al.

U.S. Patent 5,754,752 to Sheh et al.

U.S. Patent 5,796,934 to Bhanot et al.

U.S. Patent 5,951,694 to Choquier et al.

U.S. Patent 5,996,001 to Quarles et al.

U.S. Patent 6,058,424 to Dixon et al.

U.S. Patent 6,490,610 to Rizvi et al.

U.S. Patent 6,694,447 to Leach et al.

4.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Clemence Han whose telephone number is

(703) 305-0372. The examiner can normally be reached on Monday-Friday 8 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Huy Vu can be reached on (703) 308-6602. The fax phone

number for the organization where this application or proceeding is assigned is
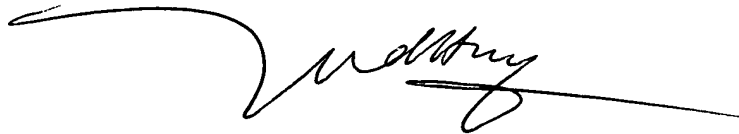
703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR

only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system,

contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Clemence Han
Examiner
Art Unit 2665

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600